

What is claimed is:

1 1. A method for implementation in an index server in a peer-to-peer system,  
 2 comprising:  
 3 receiving, from a first peer, a request for a data file, the request including an ID of  
 4 the first peer;  
 5 identifying a second peer having the data file from an index of peers;  
 6 processing payment for the data file; and  
 7 sending, to the first peer, an address of the second peer and a first encryption  
 8 dataset to decrypt the data file.

1 2. The method of claim 1, wherein the identifying identifies a second peer  
 2 geographically closest to the first peer.

1 3. The method of claim 1, wherein the identifying identifies a second peer having a  
 2 lowest number of pings in relation to the first peer.

1 4. The method of claim 1, wherein the data file is a music file.

1 5. The method of claim 1, further comprising:  
 2 selecting an advertisement to send to the first peer; and  
 3 sending, to the first peer, an address of a peer having the advertisement.

1 6. The method of claim 5, wherein the selecting an advertisement is based on  
2 demographic data associated with the first peer.

1 7. The method of claim 5, wherein the processing payment processes a reduced  
2 payment for the data file upon sending, to the first peer, the address of a peer having the  
3 advertisement.

1 8. The method of claim 1, further comprising verifying a password from the first  
2 peer before processing payment and sending, to the first peer, the address of the second  
3 peer.

1 9. The method of claim 1, wherein the processing does not occur until receipt, from  
2 the first peer, of a confirmation signal confirming receipt of the data file.

1 10. The method of claim 1, further comprising:  
2 upon receipt, from the first peer, of a signal indicating inability to retrieve the data  
3 file  
4 identifying another peer having the data file from an index of peers;  
5 sending, to the first peer, an address of the another peer and another  
6 encryption dataset to decrypt the data file.

1 11. The method of claim 1, further comprising updating the index of peers to indicate  
2 that the first peer includes a copy of the data file.

1 12. The method of claim 1, further comprising sending a second encryption dataset to  
2 the second peer.

1 13. The method of claim 12, wherein the second encryption dataset includes an  
2 encrypted public transaction key and an encrypted public key, the public key capable to  
3 encrypt data so that the encrypted data is decipherable only by the first peer.

1 14. The method of claim 1, wherein the first encryption dataset includes an encrypted  
2 private transaction key.

1 15. The method of claim 14, wherein the encrypted private transaction key is  
2 decipherable only by the first peer.

1 16. A machine-readable medium, for use in an index server in a peer-to-peer system,  
2 the server having stored thereon instructions to:  
3 receive, from a first peer, a request for a data file, the request including an ID of  
4 the first peer;  
5 identify a second peer having the data file from an index of peers;  
6 process payment for the data file based on the ID of the first peer; and

7 send, to the first peer, an address of the second peer and a first encryption dataset  
8 to decrypt the data file.

1 17. The machine-readable medium of claim 16, wherein the instruction to identifying  
2 identifies a second peer geographically closest to the first peer.

1 18. The machine-readable medium of claim 16, wherein the instruction to identify  
2 identifies a second peer having a lowest number of pings in relation to the first peer.

1 19. The machine-readable medium of claim 16, wherein the data file is a music file.

1 20. The machine-readable medium of claim 16, further comprising instructions to:  
2 select an advertisement to send to the first peer; and  
3 send, to the first peer, an address of a peer having the advertisement.

1 21. The machine-readable medium of claim 20, wherein the instruction to select an  
2 advertisement is based on demographic data associated with the first peer.

1 22. The machine-readable medium of claim 20, wherein the instruction to process  
2 payment processes a reduced payment for the data file upon sending, to the first peer, the  
3 address of a peer having the advertisement.

1 23. The machine-readable medium of claim 16, further comprising an instruction to  
2 verify a password from the first peer before processing payment and sending, to the first  
3 peer, the address of the second peer.

1 24. The machine-readable medium of claim 16, wherein the instruction to process  
2 does not occur until receipt, from the first peer, of a confirmation signal confirming  
3 receipt of the data file.

1 25. The machine-readable medium of claim 16, further comprising instructions to,  
2 upon receipt, from the first peer, of a signal indicating inability to retrieve the data  
3 file,  
4 identify another peer having the data file from the index of peers;  
5 send, to the first peer, an address of the another peer and another  
6 encryption dataset to decrypt the data file.

1 26. The machine-readable medium of claim 16, further comprising an instruction to  
2 update the index of peers to indicate that the first peer includes a copy of the data file.

1 27. The machine-readable medium of claim 16, further comprising an instruction to  
2 send a second encryption dataset to the second peer.

1 28. The machine-readable medium of claim 27, wherein the second encryption  
2 dataset includes an encrypted public transaction key and an encrypted public key, the

3 public key capable to encrypt data so that the encrypted data is decipherable only by the  
4 first peer.

1 29. The machine-readable medium of claim 16, wherein the first encryption dataset  
2 includes an encrypted private transaction key.

1 30. The machine-readable medium of claim 29, wherein the encrypted private  
2 transaction key is decipherable only by the first peer.

1 31. An index server for use in a peer-to-peer system, comprising:  
2 means for receiving, from a first peer, a request for a data file, the request  
3 including an ID of the first peer;  
4 means for identifying a second peer having the data file from an index of peers;  
5 means for processing payment for the data file based on the ID of the first peer;  
6 and  
7 means for sending, to the first peer, an address of the second peer and decryption  
8 information to decrypt the data file.

1 32. An index server for use in a peer-to-peer system, comprising:  
2 a data file index capable to store listings of data files, peers storing the data files,  
3 and encryption data needed to decrypt the data files;  
4 a distribution engine, communicatively coupled to the index, capable to

5 receive, from a first peer, a request for a data file, the request including an  
 6 ID of the first peer;  
 7 identify a second peer having the data file from the index;  
 8 process payment for the data file based on the ID of the first peer; and  
 9 send, to the first peer, an address of the second peer and a first encryption  
 10 dataset to decrypt the data file.

1 33. The server of claim 32, wherein the distribution engine is further capable to  
 2 identify a second peer that is geographically closest to the first peer.

1 34. The server of claim 32, wherein distribution engine is further capable to identify a  
 2 second peer having a lowest number of pings in relation to the first peer.

1 35. The server of claim 32, wherein the data file is a music file.

1 36. The server of claim 32, wherein the distribution engine is further capable to:  
 2 select an advertisement to send to the first peer; and  
 3 send, to the first peer, an address of a peer having the advertisement.

1 37. The server of claim 36, wherein the distribution engine is further capable to select  
 2 an advertisement based on demographic data associated with the first peer.

1 38. The server of claim 36, wherein the distribution engine is further capable to  
2 process a reduced payment for the data file upon sending, to the first peer, the address of  
3 a peer having the advertisement.

1 39. The server of claim 32, wherein the distribution engine is further capable to verify  
2 a password from the first peer before processing payment and sending, to the first peer,  
3 the address of the second peer.

1 40. The server of claim 32, wherein the distribution engine is further capable to delay  
2 processing until receipt, from the first peer, of a confirmation signal confirming receipt of  
3 the data file.

1 41. The server of claim 32, wherein the distribution engine is further capable to,  
2 upon receipt, from the first peer, of a signal indicating inability to retrieve the data  
3 file,  
4 identify another peer having the data file from the index; and  
5 send, to the first peer, an address of the another peer and another  
6 encryption dataset to decrypt the data file.

1 42. The server of claim 32, wherein the distribution engine is further capable to  
2 update the index to indicate that the first peer includes a copy of the data file.



1 43. The server of claim 32, wherein the distribution engine is further capable to  
2 update the index to indicate that the first peer includes a copy of the data file.

1 44. The server of claim 32, wherein the distribution engine is further capable to send  
2 a second encryption dataset to the second peer.

1 45. The server of claim 44, wherein the second encryption dataset includes an  
2 encrypted public transaction key and an encrypted public key, the public key capable to  
3 encrypt data so that the encrypted data is decipherable only by the first peer.

1 46. The server of claim 32, wherein the first encryption dataset includes an encrypted  
2 private transaction key.

1 47. The server of claim 36, wherein the encrypted private transaction key is  
2 decipherable only by the first peer.

1 48. A method for implementation in a first peer in a peer-to-peer system, comprising:  
2 sending, to a server, a purchase request for a data file, the purchase request  
3 including a peer identifier;  
4 receiving, from the server, an address of a second peer having the data file and a  
5 first encryption dataset for decrypting the data file;  
6 sending, to the second peer, a download request for the data file;  
7 receiving, from the second peer, the data file;

8 decrypting the data file with the first encryption dataset; and  
9 outputting the data file.

1 49. The method of claim 48, wherein the data file is a music file.

1 50. The method of claim 48, further comprising:

2 receiving, from the server, an address of a peer having an advertisement;  
3 downloading, from the peer having the advertisement, the advertisement; and  
4 playing the advertisement.

1 51. The method of claim 48, further comprising sending a password to the server  
2 before receiving the address of a second peer having the data file and the first encryption  
3 dataset for decrypting the data file.

1 52. The method of claim 48, further comprising sending, to the server, a confirmation  
2 signal confirming receipt of the data file.

1 53. The method of claim 48, further comprising sending, to the server, a signal  
2 indicating inability to download the data file when unable to download the data file.

1 54. The method of claim 53, further comprising receiving an address of a third peer  
2 having the data file after sending the signal indicating inability to download the data file.

1 55. The method of claim 48, wherein the first encryption dataset includes an  
2 encrypted private transaction key.

1 56. The method of claim 55, wherein the encrypted private transaction key is  
2 decipherable only by the first peer.

1 57. The method of claim 55, decrypting the data file using the private transaction key  
2 and a private key only known to the first peer.

1 58. The method of claim 48, further comprising:  
2 storing an encrypted copy of the data file; and  
3 notifying the server that the data file is stored.

1 59. A machine-readable medium, for use in a peer in a peer-to-peer system, the peer  
2 having stored thereon instructions to:

3 send, to a server, a purchase request for a data file, the purchase request including  
4 a peer identifier;

5 receive, from the server, an address of a second peer having the data file and a  
6 first encryption dataset for decrypting the data file;

7 send, to the second peer, a download request for the data file;

8 receive, from the second peer, the data file;

9 decrypt the data file with the first encryption dataset; and

10 output the data file.

1 60. The machine-readable medium of claim 59, wherein the data file is a music file.

1 61. The machine-readable medium of claim 59, further comprising instructions to:  
 2 receive, from the server, an address of a peer having an advertisement;  
 3 download, from the peer having the advertisement, the advertisement; and  
 4 play the advertisement.

1 62. The machine-readable medium of claim 59, further comprising an instruction to  
 2 send a password to the server before receiving the address of a second peer having the  
 3 data file and the first encryption dataset for decrypting the data file.

1 63. The machine-readable medium of claim 59, further comprising an instruction to  
 2 send, to the server, a confirmation signal confirming receipt of the data file.

1 64. The machine-readable medium of claim 59, further comprising an instruction to  
 2 send, to the server, a signal indicating inability to download the data file when unable to  
 3 download the data file.

1 65. The machine-readable medium of claim 64, further comprising an instruction to  
 2 receive an address of a third peer having the data file after sending the signal indicating  
 3 inability to download the data file.

1 66. The machine-readable medium of claim 59, wherein the first encryption dataset  
2 includes an encrypted private transaction key.

1 67. The machine-readable medium of claim 66, wherein the encrypted private  
2 transaction key is decipherable only by the first peer.

1 68. The machine-readable medium of claim 66, wherein the instruction to decrypt the  
2 data file further uses a private key known only to the first peer.

1 69. The machine-readable medium of claim 59, further comprising:  
2 storing an encrypted copy of the data file; and  
3 notifying the server that the data file is stored.

1 70. A peer in a peer-to-peer system, comprising:  
2 a peer identification; and  
3 an engine capable to  
4 send, to a server, a purchase request for a data file, the purchase request  
5 including a peer identifier;  
6 receive, from the server, an address of a second peer having the data file  
7 and a first encryption dataset for decrypting the data file;  
8 send, to the second peer, a download request for the data file;  
9 receive, from the second peer, the data file;  
10 decrypt the data file with the first encryption dataset; and

11                   output the data file.

1    71.    The peer of claim 70, wherein the data file is a music file.

1    72.    The peer of claim 70, wherein the engine is further capable to:  
2           receive, from the server, an address of a peer having an advertisement;  
3           download, from the peer having the advertisement, the advertisement; and  
4           play the advertisement.

1    73.    The peer of claim 70, wherein the engine is further capable to send a password to  
2    the server before receiving the address of a second peer having the data file and the first  
3    encryption dataset for decrypting the data file.

1    74.    The peer of claim 70, wherein the engine is further capable to send, to the server,  
2    a confirmation signal confirming receipt of the data file.

1    75.    The peer of claim 70, wherein the engine is further capable to send, to the server,  
2    a signal indicating inability to download the data file when unable to download the data  
3    file.

1    76.    The peer of claim 75, wherein the engine is further capable to receive an address  
2    of a third peer having the data file after sending the signal indicating inability to  
3    download the data file.

1 77. The peer of claim 70, wherein the first encryption dataset includes an encrypted  
2 private transaction key.

1 78. The peer of claim 77, wherein the encrypted private transaction key is  
2 decipherable only by the first peer.

1 79. The peer of claim 77, wherein the engine is further capable to decrypt the data file  
2 using the private transaction key and a private key known only to the first peer.

1 80. The peer of claim 70, further comprising:  
2 storing an encrypted copy of the data file; and  
3 notifying the server that the data file is stored.

1 81. A peer for use in a peer-to-peer system, the peer comprising:  
2 means for sending, to a server, a purchase request for a data file, the purchase  
3 request including a peer identifier;  
4 means for receiving, from the server, an address of a second peer having the data  
5 file and a first encryption dataset for decrypting the data file;  
6 means for sending, to the second peer, a download request for the data file;  
7 means for receiving, from the second peer, the data file;  
8 means for decrypting the data file with the first encryption dataset; and  
9 means for outputting the data file.